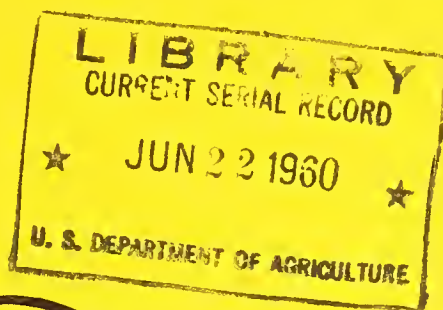


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General Report 75
July 1960

+ Cost of Handling Eggs And Labor Output Of Selected Cooperatives

PART III - Western States x

by Harry E. Ratcliffe

FARMER COOPERATIVE SERVICE

U. S. DEPARTMENT OF AGRICULTURE

FARMER COOPERATIVE SERVICE
U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON 25, D. C.

Joseph G. Knapp, Administrator

The Farmer Cooperative Service conducts research studies and service activities of assistance to farmers in connection with cooperatives engaged in marketing farm products, purchasing farm supplies, and supplying business services. The work of the Service relates to problems of management, organization, policies, merchandising, product quality, costs, efficiency, financing, and membership.

The Service publishes the results of such studies, confers and advises with officials of farmer cooperatives; and works with educational agencies, cooperatives, and others in the dissemination of information relating to cooperative principles and practices.

This study was conducted under authority of the Agricultural Marketing Act of 1946 (RMA, Title II).

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Summary

This report is part of an expanded area study similar to one made in 1950-51. The study has three major objectives, the same as those of the original study: (1) To obtain information on costs and labor requirements of the several operations in egg handling, (2) to determine and measure the factors affecting costs, and (3) to test the findings by applying them to actual operating conditions.

This report covers the first of these objectives for six farmer cooperatives in four western States. Similar reports have been published for the Northeastern and North Central areas. This report essentially presents comparative statistics of (1) total costs, (2) direct unit costs of 12 individual operations by associations, (3) indirect (overhead) costs by associations, (4) costs by type of packs, and (5) output a man-hour for the six cooperatives.

The annual volume of eggs handled by the individual plants ranged from 31,000 to nearly 460,000 cases, averaged 181,348 cases, and totalled more than 1,088,000 for the six plants.

Labor costs, direct and indirect, constituted 47.4 percent of the total

cost. Materials were next with 32.2 percent. Truck costs were 5.9 percent of the total. Other costs made up the remaining 14.5 percent.

The analysis revealed wide variations in direct costs a unit and output a man-hour for most of the 12 operations among the six associations studied. No association uniformly had the lowest or highest labor costs or outputs in all operations. These 12 operations were: Collecting, receiving, candling, cartoning, packing cartoned eggs, coopering cases, stacking, loading out, delivering, shell cleaning, shell treating, and egg breaking.

Direct labor costs for collecting eggs averaged 8.7 cents a case for six associations and ranged from 4.6 to 12.6 cents a case. Output a man-hour for collecting averaged 38.8 cases and ranged from 24.7 to 63.7 cases. Association truck costs for assembling eggs ranged from 3.6 to 9.2 cents a case and averaged 5.5 cents.

Direct labor costs for receiving eggs into plants averaged 4.8 cents and ranged from 1.4 to 8.1 cents a case. Labor output ranged from 27.7 to 198.1 cases a man-hour and averaged nearly 78 cases.

For candling eggs, the direct labor cost averaged 67.9 cents a case for five associations and ranged from 51.8 to 94.4 cents. Labor output averaged 3.6 cases a man-hour and ranged from 2.4 to 4.8 cases.

The direct labor cost of cartonning eggs which includes candling the eggs and placing them in cartons averaged 63.1 cents a case for five associations. The range was from 38.6 to 77.8 cents a case. The average labor output was four cases a man-hour and ranged from 2.2 to 6.7 cases.

The average direct labor cost of packing cartoned eggs was 6.6 cents a case and ranged from 5.4 to 8.3 cents. Output a man-hour averaged 35.3 cases and ranged from 28.5 to 40 cases.

The average direct labor cost of coopering egg cases was 3.5 cents a case with a range from 1.4 to 5 cents. Labor output averaged 88.2 cases a man-hour and ranged from 37.9 to 181.1 cases.

Stacking eggs in the holding room cost an average of 2 cents a case for labor and varied from 0.9 to 3 cents, while labor output averaged 160.9 cases a man-hour with a range of 243 cases--from 83 to 326 cases.

The labor cost of loading out eggs averaged 5 cents a case, with a range from 2.4 to 10.6 cents. Labor output a man-hour averaged 62.4 cases and ranged from 29.6 to 95.3 cases.

Direct labor cost for delivering eggs to buyers ranged from 3.3 to 49.8 cents a case among four associations delivering eggs in their own trucks. The average cost was 20.8 cents. Truck expense averaged 7.7

cents a case and ranged from 3.6 to 14.4 cents. The average cost of labor and truck expense totaled 28.5 cents a case.

The two associations shell treating eggs had a direct labor cost of 17.8 and 18.5 cents a case, respectively, and a labor output of 11.5 and 13.4 cases a man-hour.

The direct labor cost of shell cleaning eggs at the one association performing this operation was negligible because the cleaning was done in connection with the grading and packaging process.

Of the two associations breaking eggs, one had a direct labor cost of \$1.67 a case; the other, \$1.03. Output a man-hour was 1.3 and 2 cases.

Decreasing direct labor cost a case was associated with increasing volume handled in operations for 9 of 11 operations performed in more than one plant. Increasing labor output a man-hour was associated with increasing volume handled for 8 of 11 operations.

The cost of packing materials for the loose pack of eggs averaged 46.4 cents a case and ranged from 39.8 to 54.8 cents. For the cartoned pack this cost averaged 92.3 cents a case and ranged from 86.4 to 95.7 cents. Oil for shell treating averaged 1.3 cents a case for two associations. Containers for broken eggs cost an average of 48.3 cents a 30-dozen case for two associations and ranged from 43.7 to 52.8 cents.

Total indirect costs averaged 49.4 cents a case for six associations. They ranged from 34.6 to 72.4 cents. Indirect plant costs averaged 35.9 percent of total indirect costs--indirect non-plant costs 64.1

percent. Indirect plant and non-plant salaries were 51.7 percent of the total.

The total of all costs, direct and indirect, of handling eggs averaged 7.4 cents a dozen for consumer-grade, loose eggs packed in cases; 9.1 cents a dozen for consumer-grade, cartoned eggs packed in cases; and 8.9 cents a dozen for the liquid pack.

Findings of this study point up the wide variations in labor costs among associations--as much as 64 and 46 cents a case, respectively, in the high cost operations of breaking and delivering eggs. In one low cost operation, that of receiving eggs, one association's cost was nearly six times that of another. One im-

portant factor in candling labor output and unit cost was the type of equipment used. These and other findings suggest the possibilities of reducing costs.

Although this report does not analyze factors affecting costs, the unit costs presented can be used by the cooperating organizations and other egg-handling plants to compare with their own costs. Plants with costs out of line would then be in a position to take steps to find out why their costs were comparatively high and then if possible make the necessary corrections to reduce them. However, plants not included in this study will need to make sure that the method of arriving at their costs is comparable with that of this study; otherwise, the comparisons will not be valid.

Cost of Handling Eggs and Labor Output of Selected Cooperatives PART III - Western States

**by Harry E. Ratcliffe
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Costs of handling eggs are of interest and importance to producers, the management of egg-handling plants, and consumers. Low handling costs by cooperatives mean higher returns to producers or lower costs to consumers, or both.

Comparison of costs with those of other organizations enables the management of one organization to

determine whether its costs are relatively high or low. If they are high, steps may be taken to determine the cause and then to make changes and improvements in operation, plant layout, or other factors.

This report contains information to make such comparisons possible.

Background of Study

This study is similar to one made in 1950-51 but covers a wider area. It has three major objectives: (1) To obtain information and data on costs and labor requirements of the several operations or steps in handling eggs for determining averages,

ranges, and yardsticks; (2) to determine and to measure the factors affecting costs and labor output; and (3) to find and apply methods, skills, techniques, and other means of increasing efficiency in individual operations and organizations. These

Note: Appreciation is expressed to the managers and employees of the associations studied for their cooperation and assistance; to Henry W. Bradford of the Poultry Branch, Farmer Cooperative Service, for assistance with the field work; and to John J. Scanlan, Chief, Poultry Branch, who made substantial contributions in planning and conducting the study.

are similar to the objectives of the original study.

The first study¹ included 9 cooperatives in 5 Northeastern States and 16 in 7 North Central States. The present study of 23 cooperatives covers 6 in the Western States in addition to 8 in the Northeastern and 9 in the North Central States.

The benefits of cost reductions could eventually affect all egg-handling agencies, whether cooperatives or not.

Scope and Purpose

This is a regional report of data obtained during 1958 from the six cooperatives in the Western area. It covers (1) total costs, (2) direct costs of handling eggs by specific operations, (3) total indirect costs, (4) labor output a man-hour, and (5) costs by type of pack.

It is primarily a comparative statistical summary consisting of 25 cost and labor output tables covering the phases mentioned above. There are presented direct costs and labor output by cooperatives and individual operations, indirect costs by cooperatives but not by individual operations, and costs by type of pack by cooperatives.

¹Bradford, Henry W., Ratcliffe, Harry E., and Scanlan, John J. Costs and Labor Efficiency of Specialized Egg Marketing Cooperatives in the Northeast. Farm Credit Admin., U.S. Dept. of Agr. Misc. Rept. 158. Feb. 1952.

Ratcliffe, Harry E., Bradford, Henry W., and Scanlan, John J. Cost of Handling Eggs by Selected Cooperatives in the North Central States. Farm Credit Admin., U.S. Dept. of Agr. Misc. Rept. 162. May 1952.

These publications are out of print but copies are available for reference in most agricultural college and university libraries.

The purpose of this regional report is to make available as quickly as possible information for use of cooperatives and others, particularly in the Western States, in comparing costs and labor efficiency.

Two similar reports have been published--one on the Northeastern² area and one on the North Central³ area. Later, a final analytical combined report will be prepared covering the 23 cooperatives in the 3 areas.

Organizations Selected

Cooperatives included in the study were selected because they were: (1) doing an effective job of marketing eggs; (2) either candling or cartoning a large portion of eggs received; (3) handling relatively large volumes compared with other associations in their areas; or (4) using newer type equipment.

Two associations were selected in California and one each in Oregon, Utah, and Washington. One California association operated only one egg handling plant. The other four associations operated more than one plant. Data were obtained separately from two plants of the Utah association but from only one plant each of the other three. Thus, five associations and six plants were included in the selection.

Four associations are essentially farm supply cooperatives handling

²Ratcliffe, Harry E. Cost of Marketing Eggs and Labor Output of Selected Cooperatives. Part I--Northeast. Gen. Rept. 59. Farmer Cooperative Service, U.S. Dept. of Agr. May 1959.

³Ratcliffe, Harry E. Cost of Marketing Eggs and Labor Output of Selected Cooperatives. Part II--North Central. Gen. Rept. 72. Farmer Cooperative Service, U.S. Dept. of Agr. May 1960.



Egg handling co-ops are in the forefront in the use of mechanical egg grading packaging equipment.

large quantities of eggs and some poultry. They were originally egg handling and marketing cooperatives. The other one is still an egg cooperative but handles a large volume of feed and some farm supplies.

Each association has been given a code letter in this report, as the information and data were obtained on a confidential basis with the understanding that the names or addresses of the cooperating associations would not be divulged.

The six plants⁴ received a total of 1,088,087 cases of eggs, or an average of 181,348 cases for each

plant, during the year ending with the 2-week period of the study. The smallest in volume received 31,000 cases and the largest nearly 459,650 cases.

In comparison, the five associations handled a total volume of 3,224,943 cases of eggs, or an average of nearly 645,000 cases an association, during the same period. The total volume an association ranged from a low of 230,148 to a high of 1,823,815 cases.

Period Covered

An intensive study of the operations of each cooperative was made over a period of 2 consecutive weeks. Because of limitations of time and personnel, it was not possible to visit all associations during com-



Close up view of candling eggs for quality.

⁴Data obtained were for single egg plants. In the case of multiple plant associations, the figures shown did not represent the whole operation. Unless otherwise noted, the term "association" or "associations" in the remainder of the report refers to a single plant or total of the single plants covered.

parable periods in their seasonal volume cycle. Consequently, the volume handled by the cooperatives during the period visited was below the average for the year for some cooperatives and above for others, and, therefore, unlikely to be representative of a typical week.

Table 1 shows the relationship of the volume received by each cooperative during the period studied to the average for the previous 52 weeks. The receipts of half of the cooperatives--T, U, and V--were above the yearly average for the six plants. The other half--R, S, and W--were below the average. The average of the six plants' receipts during the 2-week period visited was 106 percent of the average for the year. Unit costs of a cooperative with its period volume below its annual average were usually higher than average costs, and one with volume above average usually had lower unit costs during the 2-week period.

Table 1. --Percentage relationship of egg receipts during 2-week period to average for the year, six associations, 1958¹

Association	Receipts of period in relation to average for year
	<i>Percent</i>
R	80
S	87
T	122
U	137
V	120
W	90
Average	106
Range:	
Low	86
High	138

¹ The year covered the 52 weeks ending with the last day of the period of study.

Operations Included

A comparison of total operating costs was inadequate because all firms did not perform the same services or perform them in the same proportion. Therefore, it was necessary to break down costs and labor output by individual steps, operations, or services through the handling or marketing process so that they could be made as nearly comparable as possible among cooperatives.

It was essential that the elements making up an operation be the same for all the plants. Minor differences were, however, difficult or impossible to eliminate, but as great similarity as possible was obtained to make the comparisons meaningful. Relative sameness of an operation narrows it down so that the number of variables is reduced and the comparison of operations is made practicable for the purpose of study.

In this study, handling eggs through the cooperatives was broken down into as many as 12 separate operations. These are: Collecting, receiving, candling, cartoning, packing cartoned eggs, coopering cases, stacking eggs in holding rooms, loading out, delivering, shell treating, shell cleaning, and egg breaking.⁵

Table 2 shows the number of operations performed by each of the six associations studied. None of

⁵ The operations of inspecting eggs for the wholesale grades and sizing eggs are not included in this report as they were in General Report 59, "Cost of Marketing Eggs and Labor Output of Selected Cooperatives, Part I, Northeast," because the western cooperatives handled no eggs on a wholesale grade basis and sizing of eggs was not separable from the candling operation.

Table 2. --Egg handling operations performed by six associations, 2-week period, 1958¹

Associ- ation	Operation												Total operations performed
	Collecting	Receiving	Candling	Cartoning	Packing cartoned eggs	Coopering	Stacking	Loading out	Delivering	Shell treat	Shell clean	Egg breaking	
R		X	X			X	X	X					<i>Number</i> 5
S	X	X	X	X	X	X	X	X			X		9
T	X	X	X	X	X	X	X	X	X	X		X	11
U	X	X	X	X	X	X	X	X	X	X		X	11
V	X	X	X	X	X	X	X	X	X				9
W	X	X	X	X	X	X	X	X	X				9
Total	5	6	6	5	5	6	6	6	4	2	1	2	--

¹ An X mark indicates that an operation was performed.

the associations performed all 12 operations. Two associations performed 11 of the operations, 3 performed 9 operations, and 1 only 5 operations. Collecting, cartoning, and packing cartoned eggs were done by 5 associations; receiving, candling, coopering, stacking, and loading out by all 6 associations; delivering by 4; shell treating and egg breaking by 2; and shell cleaning by only 1 association.

In order to make the costs and labor outputs as comparable as possible among cooperatives studied, it was necessary to determine precisely where each operation began and ended. In the case of labor, this was done by including the pertinent labor elements covered in each operation, as listed below:

1. Collecting (hauling eggs to plant):

Loading truck with empty cases
Driving truck and driver's helper

Loading truck at farms
Making out producers and route records

2. Receiving (plant labor):

Unloading (including time of trucker)
Receiving door deliveries
Weighing-in cases
Moving eggs to receiving room
Sorting cases
Recording receipts

3. Candling (loose to case):⁶

Moving eggs to candlers
Removing case covers
Obtaining and readying empty cases
Putting eggs on sizing machine
Packing loose eggs from sizing machine

⁶Unit labor cost for candling and for cartoning was based upon the actual case output of an operation rather than case input. For example, if 100 cases, of which 15 percent were rejects, went to the cartoning operation, the cost and volumes were allocated based on 85 cases cartoned and 15 cases candled and packed loose.

Candling operation
Putting eggs in cases
Recording candling results
Replacing case covers
Weighing after candling
Removing cases
Stamping candled cases

4. Cartoning (candling to cartons):⁶

Moving eggs to candler
Removing case covers
Obtaining and setting up cartons
Putting eggs on or taking off sizing machine or belt
Candling operation
Putting eggs in cartons
Closing cartons
Recording candling results
Marking, sealing, and labeling cartons
Removing cartoned cases
Unloading and storing cartons

5. Packing (cartoned eggs):

Obtaining and readying empty cases
Stamping, labeling, or marking cartoned cases
Inserting flats
Putting cartons in cases
Closing cases
Sealing cartoned cases
Stacking cartoned cases for removal to holding place

6. Coopering (including storing empty cases):

Obtaining shook or used cases
Making or setting up new cases
Repairing used cases
Putting flats and fillers in new cases

Putting labels on cases during coopering
Removing coopered cases
Stacking coopered cases

7. Stacking and holding (in plant):

Stacking (when several high and separate from candler removal)
Moving cases to holding place
Sorting cases
Restacking cases
Weighing and labeling cases

8. Loading out:

Moving to trucks or railroad cars
Loading (including time of truckers when helping)
Making out shipping records, bills of lading, and delivery instructions

9. Delivering (hauling to buyers; truck personnel only):

Driving truck
Unloading eggs
Making records of collections

10. Shell treating:

Preparing oil
Readying empty cases and equipment
Moving cases to machine
Oiling
Packing in cases
Labeling, marking, and the like
Removing filled cases

11. Shell cleaning:

Hauling to cleaner
Buffing
Washing
Removal from cleaning operation

See footnote on page 5.

12. Egg breaking:

Moving to breaking room
Breaking
Operation of mixer, pump, and
the like
Filling and covering cans
Putting cans in refrigerator
Making out breaking records
Cleaning equipment and room

Data Collected

During the 2-week period, information was collected concerning (1) direct costs and labor requirements, (2) indirect costs, and (3) related information.

Direct Costs and Labor Requirements

Data collected under "direct costs" pertain to direct labor, packing and processing materials, truck operating and contract hauling, and other direct costs.

As used in this report, direct labor costs and direct labor requirements are those for a single operation or part of an operation. They, therefore, can be separated and can be traced directly to that operation or to one or more of its elements. Direct labor costs vary in total amount as the product volume increases or decreases, but on a unit basis they are affected much less



Unloading eggs a truckload at a time with mechanical equipment speeds up the receiving process.

than indirect costs by changes in volume.

Labor requirements or man-hour outputs were determined by dividing the total number of hours required to perform an operation over a period of time by the number of cases handled in the operation during the same period. These outputs are important because they usually reflect labor efficiency more accurately than do dollar-and-cents costs and do not become outdated so soon. Labor outputs are an important factor affecting differences in unit costs among associations.

Costs for direct labor, in addition to wages and salaries for regular and overtime work, included fringe benefits such as Federal old age benefits, unemployment insurance, workmen's compensation, bonuses, pensions, and hospital insurance. After the labor cost for each employee was determined, his time and wages were charged to the operation or operations in which he worked. When he worked on more than one operation, his wages were distributed among them on a time basis.

All the costs incurred for materials were determined according to three types of egg packs used. These are: (1) 30 dozen loose or case pack, (2) 30 dozen or equivalent cartoned pack, and (3) liquid pack.

The most important materials were case shells, flats and fillers or filler-flats, case labels, gummed tape, cartons, cartoned seals, oil for shell treating, washing materials, and cans and lids for liquid eggs. In instances where both new and old materials were used, it was necessary to determine the proportions of each in order to calculate the average unit cost.

Cost data for operating association trucks and charges for contract trucking were obtained.

Other direct costs incurred were service fees for Federal or State inspection and grading, and royalties on machines for setting up and closing cartons and grading and packing eggs.

Indirect or Overhead Costs

Indirect costs refer to those which are incurred for more than one operation or for parts of more than one operation. They, therefore, cannot be readily separated and are difficult to trace directly to an individual operation or its elements. Most indirect costs are fixed costs and change little in total amount when the volume of product changes. But on a unit basis, they decrease when the volume increases and increase when the volume is less.

When indirect costs were collected and analyzed, they were divided into labor and other costs.

Indirect Labor Costs.--Indirect labor costs, which include the salaries or wages of the manager, office help, salesmen, fieldmen, janitors, night watchmen, repair and maintenance employees, and plant foreman, were determined for the specific period under study. As such, the represent costs for the same period as direct labor. When the work of some employees was chargeable to both direct and indirect costs, their labor costs were divided accordingly.

Other Indirect Costs.--Indirect expenses, other than indirect labor

costs, were obtained from the audit report for the latest fiscal year of each association. These annual data were then calculated on a period basis, and the period average applied to current operations. In other words, indirect cost figures, excluding indirect labor, were also for a 2-week period and were therefore 1/26 of such costs of the fiscal year preceding the period of study.

This method was used because indirect cost information was not currently available on a short-time basis for the period of study. Also, annual indirect costs, especially in total, were found to vary little from year to year for any individual association. Therefore, a 2-weeks' apportionment of the previous year's indirect costs was considered sufficiently accurate and reliable for this analysis.

Indirect costs on a unit basis were calculated by dividing the average period of indirect costs by the 2-week average number of cases of eggs received during the 12 months ending with the close of the period of study (volume for the previous 12 months divided by 26). This study did not apportion these costs to individual operations as it did direct costs. It should be pointed out that a comparison of these unit indirect costs among associations may not be as meaningful as direct costs by operations, because they are not apportioned by operations. In each operation the number of services rendered and the relative volume of eggs handled may vary widely.

Indirect costs, other than indirect labor, include the following expense items:

Plant:

- Heat, power, and water
- General insurance
- Real estate and personal property taxes
- Maintenance and repair
- Plant supplies (general)
- Depreciation
 - Buildings
 - Plant equipment
- Miscellaneous

Non-plant:

- Office supplies, stationery, and printing
- Postage
- Telephone and telegraph
- Advertising
- Bad debts
- Interest
- Bank service
- Auditing and legal
- Travel
- Automobile
- Directors' expense
- Annual meeting expense
- Educational expense
- Dues and subscriptions
- Contributions and donations
- Depreciation
 - Furniture and fixtures
 - Automobile
- Miscellaneous

In instances where marketing associations handle farm supplies and other farm products as well as eggs, it is necessary to allocate the proper portion of each indirect expense item to the egg department. The records of most associations provided such allocations to the egg department. But even in such cases, modifications were sometimes found necessary in order to handle indirect individual expense allocations uniformly for all associations.

Other Information

Facts other than cost data were obtained during the period of study. These helped to explain costs, factors affecting costs, and labor efficiency. For the most part, this information included labor rates for regular and overtime work, amount of overtime, quality of eggs candled and cartoned, grading standards used,

number and type of jobs performed by candlers, percentage of eggs sized on farms before reaching the plant, types of equipment used, plant and equipment layout, flow of eggs through the plant, length of farm routes, and frequency of farm pickups. This information will be used in making the analysis of factors affecting costs and included in the analytical report to be issued later.

Cost and Output Comparisons

Cost comparisons will now be shown for (1) the total direct and indirect costs of six western associations, (2) direct unit costs and labor output of handling eggs of individual associations by operations, (3) indirect unit costs by associations, and (4) costs by type of pack.

Total Costs

The total cost of handling eggs through the six associations for the sample 2-week period appears in table 3. The total cost was subdivided into direct and indirect costs. Direct costs were further divided into labor, materials, truck, and other costs. Indirect costs were divided into labor and other indirect costs.

Total costs for the six associations for the 2-week period were \$113,963.06, or an average of \$18,993.84. By associations, the total cost ranged from a high of \$45,571.34 to a low of \$1,602.42. Direct costs constituted an average of 80.8 percent of the total; indirect costs, 19.2 percent. For the association with the greatest total costs, direct costs were 76 percent of the

total as compared with 70.8 percent for the association with the smallest total costs.

Total labor cost, both direct and indirect, accounted for 47.4 percent of the total cost for six associations. For the association with the greatest total costs, this percentage was 38.3 and 55.1 for the association with the lowest total cost.

Materials was the next most important direct cost item--approximately 32 percent of the total cost for the six associations and 34 and 29 percent for the largest and smallest association, respectively.

Truck costs averaged nearly 6 percent of the total. Miscellaneous small direct items and indirect costs, exclusive of indirect labor, made up the remaining 14.5 percent of total costs of six associations (table 3).

Direct Costs and Labor Output

Direct costs in this report are on a case-unit basis for: (1) Direct labor, truck, and labor output by individual plant operations,

Table 3. --Total direct and indirect costs for handling eggs at six associations, 2-week period, 1958

Item	Cost				Percentage		
	Total for six associations	Average for six associations	Range		Average six associations	Range	
			Largest association	Smallest association		Largest association	Smallest association
Direct costs:							
Labor	\$43,801.84	\$7,300.31	\$14,110.00	\$670.26	38.4	31.0	41.8
Materials ¹	36,672.99	6,111.30	15,558.39	464.34	32.2	34.1	29.0
Truck ²	6,725.35	1,120.89	1,659.35	--	5.9	3.7	0.0
Other ³	4,905.74	817.63	3,284.61	--	4.3	7.2	0.0
Total	92,105.92	15,350.98	34,612.35	1,134.60	80.8	76.0	70.8
Indirect costs:							
Labor	10,209.73	1,701.62	3,339.18	212.48	9.0	7.3	13.3
Other than labor	11,647.41	1,941.24	7,619.81	255.34	10.2	16.7	15.9
Total	21,857.14	3,642.86	10,958.99	467.82	19.2	24.0	29.2
Grand total	113,963.06	18,993.84	45,571.34	1,602.42	100.0	100.0	100.0

¹ Materials used for packing loose, cartoned, and liquid eggs and shell treating.

² Includes truck expense of association trucks and charges for contract trucking.

³ Includes State or Federal inspection fees, rental for cartoning equipment, and for sizing and packaging equipment for two associations.

(2) materials by type of pack, and
(3) other direct costs by operations.
The cost groups are discussed in this order below.

Labor and Truck Costs and Output by Plant Operations

Average direct labor costs for the six cooperatives by operations ranged from a low of 2 cents for stacking eggs in the holding room to a high of \$1.35 a case for egg breaking (table 4 and figure 1).

Average unit costs for labor were relatively high for egg breaking, cartoning, candling, and delivering. For example, the average costs of these operations, on an individual operation basis, ranged from 20.8

cents for delivering to \$1.35 for egg breaking. In contrast, the lower cost operations of stacking, coopering cases, receiving, loading out, packing cartoned eggs, collecting, and shell treating ranged from 2 for stacking to 18.2 cents a case for shell treating.

A wide range of labor output existed among the operations. For example, the stacking, coopering, receiving, and loading out operations have the largest average output a man-hour--159.6, 88.2, 78, and 62.5 cases, respectively. In contrast, the egg-breaking output was only 1.7 cases; candling, 3.6; and cartoning, 4 cases (table 5).

No association had direct labor costs or labor outputs that were

Table 4.--Cost of direct labor by operations and associations, 2-week period, 1958

Association	Collect- ing	Re- ceiving	Candling	Carton- ing	Packing cartoned eggs	Coop- ering cases	Stack- ing	Loading out	Deliver- ing	Shell treating	Shell cleaning	Egg break- ing	Number of	
													Lowest cost	Highest cost
Cents per case														
R	(¹)	[8.1]	[44.5]	(¹)	(¹)	[5.0]	1.0	[2.4]	(¹)	(¹)	(¹)	(¹)	2	2
S	(²)	6.8	52.7	³ 76.6	(⁴)	4.5	2.5	3.0	(¹)	(¹)	30.9	(¹)	0	0
T	9.9	2.7	80.6	[74.6]	6.2	4.0	2.4	5.5	[49.8]	[17.8]	(¹)	[⁵ 166.8]	1	3
U	7.5	6.0	[94.4]	⁶ 77.8	(⁴)	4.5	[3.0]	[10.6]	14.9	[18.5]	(¹)	[102.9]	1	4
V	[4.6]	[1.4]	51.8	[38.6]	[5.4]	1.6	2.2	4.8	[3.3]	(¹)	(¹)	(¹)	5	0
W	[12.6]	3.7	59.8	47.7	[8.3]	[1.4]	[.9]	3.8	15.1	(¹)	(¹)	(¹)	2	2
Average	8.7	4.8	64.0	53.6	6.6	3.5	2.0	5.0	20.8	18.2	--	134.9	--	--
Range:														
Low	4.6	1.4	44.5	38.6	5.4	1.4	.9	2.4	3.3	17.8	--	102.9	--	--
High	12.6	8.1	94.4	74.6	8.3	5.0	3.0	10.6	49.8	18.5	--	166.8	--	--
Number that highest cost is times lowest cost														
	2.7	5.8	2.1	1.9	1.5	3.6	3.3	4.4	15.1	1.0	--	1.6		

¹ Operation not performed.

² Contract hauling.

³ Includes packing cartoned eggs. Not included in average or range.

⁴ Included in cartoning operation.

⁵ One-week period.

⁶ Includes the labor cost of packing cartoned eggs and cartoning 662 cases of eggs candled elsewhere. Not included in average or range.

[] Low

[] High

Figure 1
Cost of Direct Labor by Operations, Six Associations, 2-Week Period, 1958

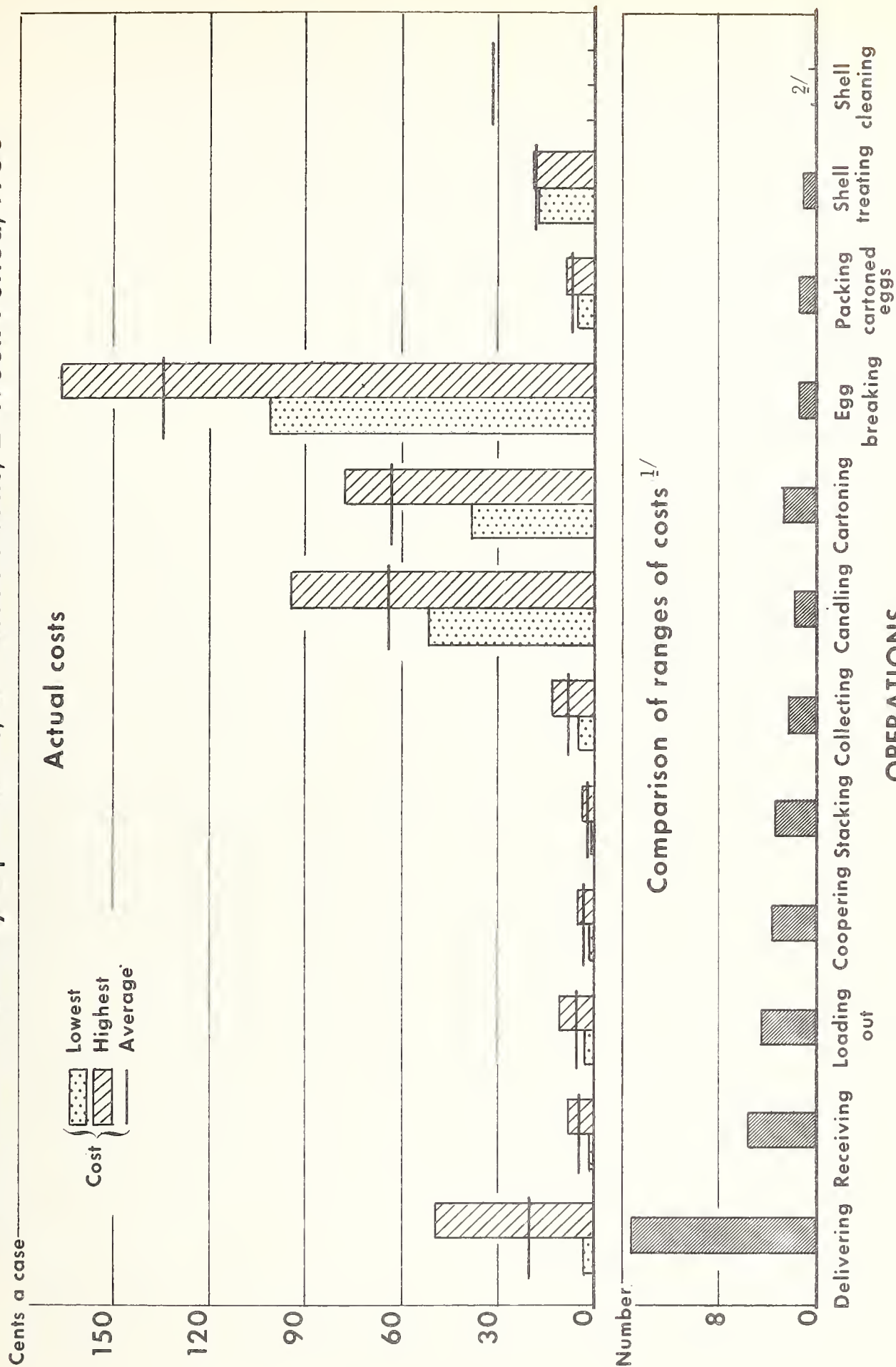


Table 5. --Labor output a man-hour by operations and associations, 2-week period, 1958

Associa- tion	Collect- ing	Re- ceiv- ing	Can- dling	Carton- ing	Packing cartoned eggs	Coop- ering cases	Stack- ing	Loading ing	Deliver- ing	Shell treat- ing	Shell clean- ing	Number of	
												Lowest output	Highest output
R	(¹)	27.7	[5.5]	(¹)	(¹)	<i>Cases</i> 39.7	233.4	[95.3]	(¹)	(¹)	(¹)	1	2
S	(²)	30.2	3.4	³ 2.2	(⁴)	[37.9]	[83.1]	66.6	(¹)	(¹)	6.7	2	0
T	27.9	93.2	3.0	[3.2]	37.3	59.8	119.7	52.7	[6.2]	[13.4]	(¹)	2	1
U	(⁶)	44.7	[2.4]	³ 2.8	(⁴)	47.3	86.8	[29.6]	18.5	[11.5]	(¹)	3	1
V	[63.7]	[198.1]	4.8	[6.7]	[40.0]	163.3	116.3	55.8	[87.3]	(¹)	(¹)	0	5
W	[24.7]	74.0	4.2	5.3	[28.5]	[181.1]	[325.9]	74.8	19.2	(¹)	(¹)	2	2
Average	38.8	78.0	3.9	5.1	35.3	88.2	160.9	62.5	32.8	12.5	--	--	--
Range:													
Low	24.7	27.7	2.4	3.2	28.5	37.9	83.1	29.6	6.2	11.5	--	--	--
High	63.7	198.1	5.5	6.7	40.0	181.1	325.9	95.3	87.3	13.4	--	--	--
Number that highest output is times lowest output	2.7	7.2	2.3	2.1	1.4	4.8	3.9	3.2	14.1	1.2	1.5		

¹ Operation not performed.² Contract hauling.³ Includes packing cartoned eggs.⁴ Included in cartoning operation.⁵ One-week period.⁶ Hours not available.

Low

High

uniformly high or low in all operations. An association might have the highest labor cost or labor output in one operation and the lowest in another, as compared with other associations. A comparison of direct labor costs by associations and operations (table 4) indicates the associations with the lowest and highest cost for each operation. Association R had the lowest labor cost for candling and loading out and the highest for receiving and coopering cases. Association T had the lowest labor cost for shell treating and the highest for delivering and egg breaking. Association W had the lowest labor cost for two operations, coopering cases and stacking, and the highest for two, collecting and packing cartoned eggs.

Table 4 also shows the average direct labor cost, range in costs, and the number of times the highest cost is more than the lowest cost for each operation.

The lowest direct labor cost of 11 operations performed by more than one association was split among 5 associations, with association V having the lowest cost in 5 operations--collecting, receiving, cartoning, packing cartoned eggs, and delivering. The highest direct labor cost operations were shared by four of the six associations, with association U highest in cost in four operations--candling, stacking, loading out, and shell treating. Associations S and V were not highest in any operation. Figure 1 emphasizes the variations in average costs by operations.

A similar comparison of labor output a man-hour for each operation appears in table 5 and figure 2. As with direct labor cost a case, no association had a consistently

low or high output a man-hour for all operations, although associations S and U had the lowest output in three and four operations, respectively, and association V had the highest output in five operations. Both the lowest and highest outputs were divided among five of the six associations. The greatest difference between the highest and lowest output a man-hour was for the delivering operation--8.2 times. This difference ranged downward to 1.2 times for shell treating with only two associations performing the operation.

On a functional basis, tables 6 through 18 show figures on direct

Table 6. --Collecting eggs from farms: Average direct labor cost and output a man-hour, four associations, 2-week period, 1958¹

Group and associations	Cost	Output a man-hour
	<i>Cents per case</i>	<i>Cases</i>
Upper volume group ²		
V	4.6	63.7
T	9.9	27.9
Average 2 associations ³	7.3	45.8
Lower volume group ⁴		
W	12.6	24.7
U	7.5	(5)
Average 2 associations ³	10.1	--
Average all associations ³	8.7	38.8
Range:		
Low	4.6	24.7
High	12.6	63.7

¹ Does not include contract hauling.

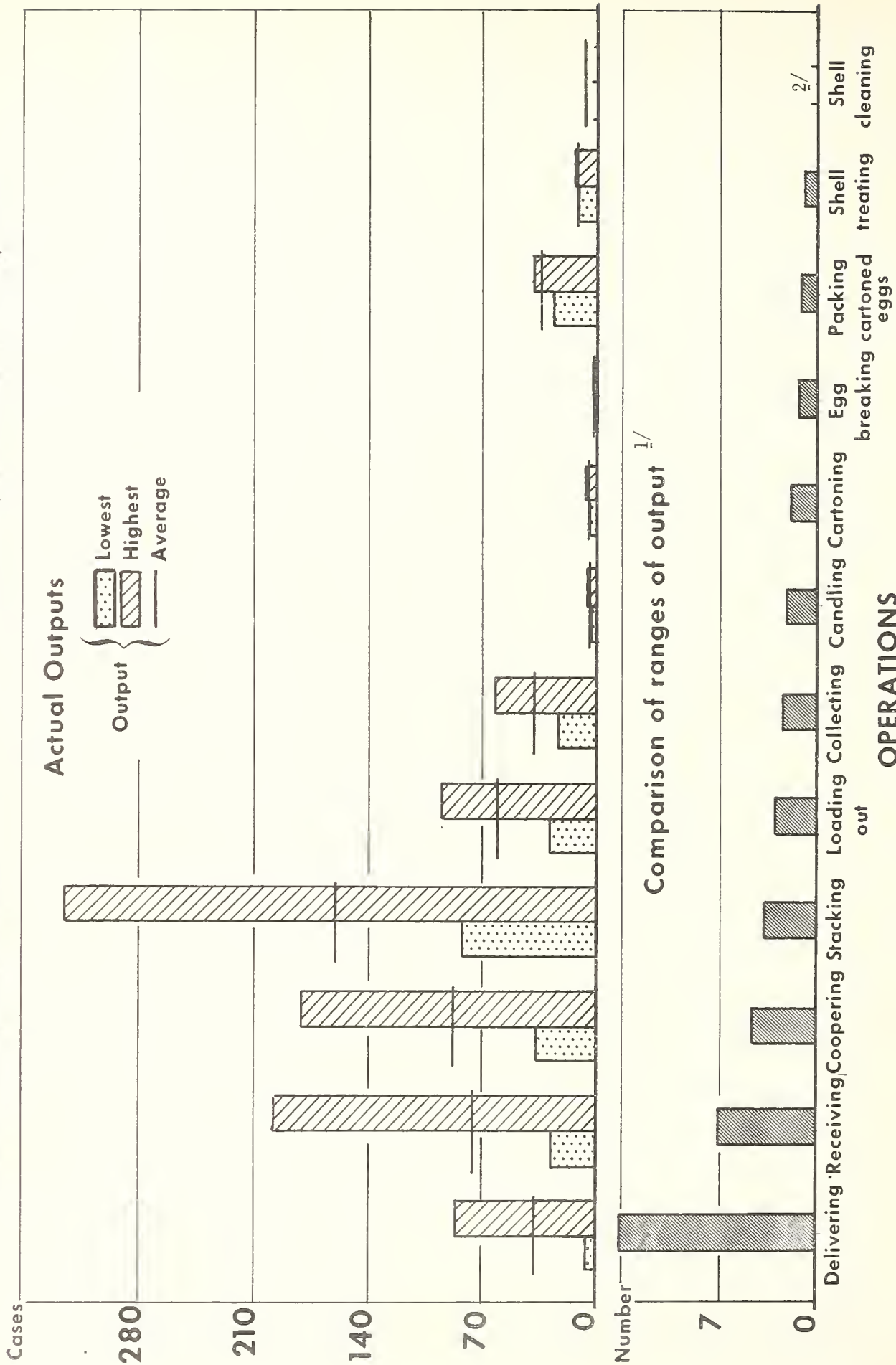
² Average volume collected was 22, 747 cases.

³ Unweighted average.

⁴ Average volume collected was 4, 736 cases.

⁵ Hours not available.

Figure 2
Labor Output per Man-hour, Six Associations, 2-Week Period, 1958



labor cost and output by operations, from the collection of eggs at the farm to delivery of eggs to the buyer.

The associations are arranged in each table according to the number of cases of eggs handled in the operation and divided into two volume groups, upper and lower, in order to give some indication of the effect, if any, of volume on unit cost and output a man-hour.

Collecting.--The direct labor cost of collecting eggs varied among the four associations performing this service, from a low of 4.6 cents for association V to a high of 12.6 cents a case for association W. The upper

volume group of associations collecting an average of 22,747 cases had an average labor cost of 7.3 cents a case or 2.8 cents less than the 10.1 cents for the lower volume group collecting an average of only 4,736 cases during the 2-week period (table 6).

Cases of eggs collected each man-hour varied from a low of 24.7 cases for association W to 63.7 cases for association V. Output decreased as volume collected decreased (table 6).

A more complete breakdown of collecting costs appears in table 7. Total collecting costs for association

Table 7. --Collecting eggs from farms, average direct costs, five associations, 2-week period, 1958

Group and association	Association trucks			Contract trucks ¹	Total
	Direct labor	Truck expense	Total		
Upper volume group ²					
			<i>Cents per case</i>		
V	4.6	3.6	8.2	--	8.2
T	9.9	5.7	15.6	--	15.6
W	<u>12.6</u>	<u>9.2</u>	<u>21.8</u>	<u>39.0</u>	³ <u>24.0</u>
Average ⁴	<u>9.0</u>	<u>6.2</u>	<u>15.2</u>	<u>--</u>	<u>15.9</u>
Lower volume group ⁵					
U	7.5	3.6	11.1	--	11.1
S	<u>--</u>	<u>--</u>	<u>--</u>	<u>15.8</u>	<u>15.8</u>
Average ⁴	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>13.5</u>
Average all associations ⁴	<u>8.7</u>	<u>5.5</u>	<u>14.2</u>	<u>27.4</u>	<u>14.9</u>
Range:					
Low	4.6	3.6	8.2	15.8	8.2
High	12.6	9.2	21.8	39.0	24.0

¹ Cost or charge to association or association patrons.

² Average volume collected was 17,536 cases.

³ Weighted average of figures for association and contract trucks.

⁴ Unweighted average of vertical column.

⁵ Average volume collected was 1,747 cases.

trucks, including direct labor, ranged from a low of 8.2 cents for association V to a high of 21.8 cents a case for association W and averaged 14.2 cents for four associations. For association trucks, the direct labor cost on the average was 61.2 percent of total collecting costs. For the association using both its own trucks and contract trucks in collecting eggs, the total collecting cost was 21.8 with association trucks and 39 cents or 17.2 cents a case more with contract trucks. The volume collected with association trucks was much larger than with contract trucks--6,471 and 941 cases, respectively.

Receiving.--Direct receiving labor averaged 2.6 cents a case for the upper volume group. This was 4.4 cents less than the 7 cents average for the lower volume group (table 8). The average volume received by the upper volume group was 14,853 cases--more than seven times that of the lower group. The cost ranged among six associations from a low of 1.4 cents for association V to a high of 8.1 cents for association R. Association V received a volume of eggs nearly 25 times more than that of association R and had equipment to unload a truckload of eggs in a few minutes' time.

Receiving output a man-hour for the upper volume group averaged more than 3.5 times higher than that for the lower group--121.8 cases as compared with 34.2 cases. Labor output ranged from a low of 27.7 cases for association R to 198.1 cases for association V--the same associations with the respective highest and lowest labor cost a man-hour. Average output was 78 cases.

Table 8. --Receiving eggs: Average direct labor cost and output a man-hour, six associations, 2-week period, 1958

Group and association	Cost	Output a man-hour
<i>Cents per case</i>		
Upper volume group ¹		<i>Cases</i>
V	1.4	198.1
T	2.7	93.2
W	3.7	74.0
Average 3 associations ²	2.6	121.8
Lower volume group ³		
U	6.0	44.7
S	6.8	30.2
R	8.1	27.7
Average 3 associations ²	7.0	34.2
Average 6 associations ²	4.8	78.0
Range:		
Low	1.4	27.7
High	8.1	198.1

¹ Average volume received was 14,853 cases.

² Unweighted average.

³ Average volume received was 2,086 cases.

Candling.--This operation covers eggs candled loose into cases. Direct labor costs and eggs candled a man-hour are shown in table 9. Labor is divided between that for direct candling and auxiliary labor. Auxiliary labor is that required to supply eggs to the candlers, size eggs when separate from direct candling, supply materials, and remove the eggs from candlers after candling.

The direct labor cost a case for direct candling of eggs averaged 28.3 cents less for the upper volume group than for the lower volume group--33.2 as compared with 61.5 cents. This cost ranged from a low of 32.8 cents for association W to 73.8 for association U.

Table 9. --Candling eggs: Average direct labor cost and output a man-hour, six associations, 2-week period, 1958

Group and association	Cost			Output a man-hour		
	Direct candling	Auxiliary labor ¹	Total labor	Direct candling	Auxiliary labor ¹	Total labor
Upper volume group ²		<i>Cents per case</i>			<i>Cases</i>	
V	33.5	18.3	51.8	7.9	12.2	4.8
T	33.3	47.3	80.6	7.2	5.1	3.0
W	32.8	27.0	59.8	7.8	8.8	4.2
Average 3 associations ³	33.2	30.9	64.1	7.6	8.7	4.0
Lower volume group ⁴						
U	73.8	20.6	94.4	3.2	10.9	2.4
R	(⁵)	(⁵)	⁶ 44.5	(⁵)	(⁵)	⁶ 5.5
S	49.1	3.6	52.7	3.6	57.1	3.4
Average 2 associations ³	61.5	12.1	73.6	3.4	34.0	2.9
Average 5 associations ³	44.5	23.4	67.9	5.9	18.8	3.6
Range:						
Low	32.8	3.6	51.8	3.2	5.1	2.4
High	73.8	47.3	94.4	7.9	57.1	4.8

¹ Includes such labor as supplying eggs to candlers and removing eggs after candling.

² Average volume candled was 4,151 cases.

³ Unweighted average.

⁴ Average volume candled was 1,327 cases.

⁵ Not separately obtained.

⁶ Not included in average or range.

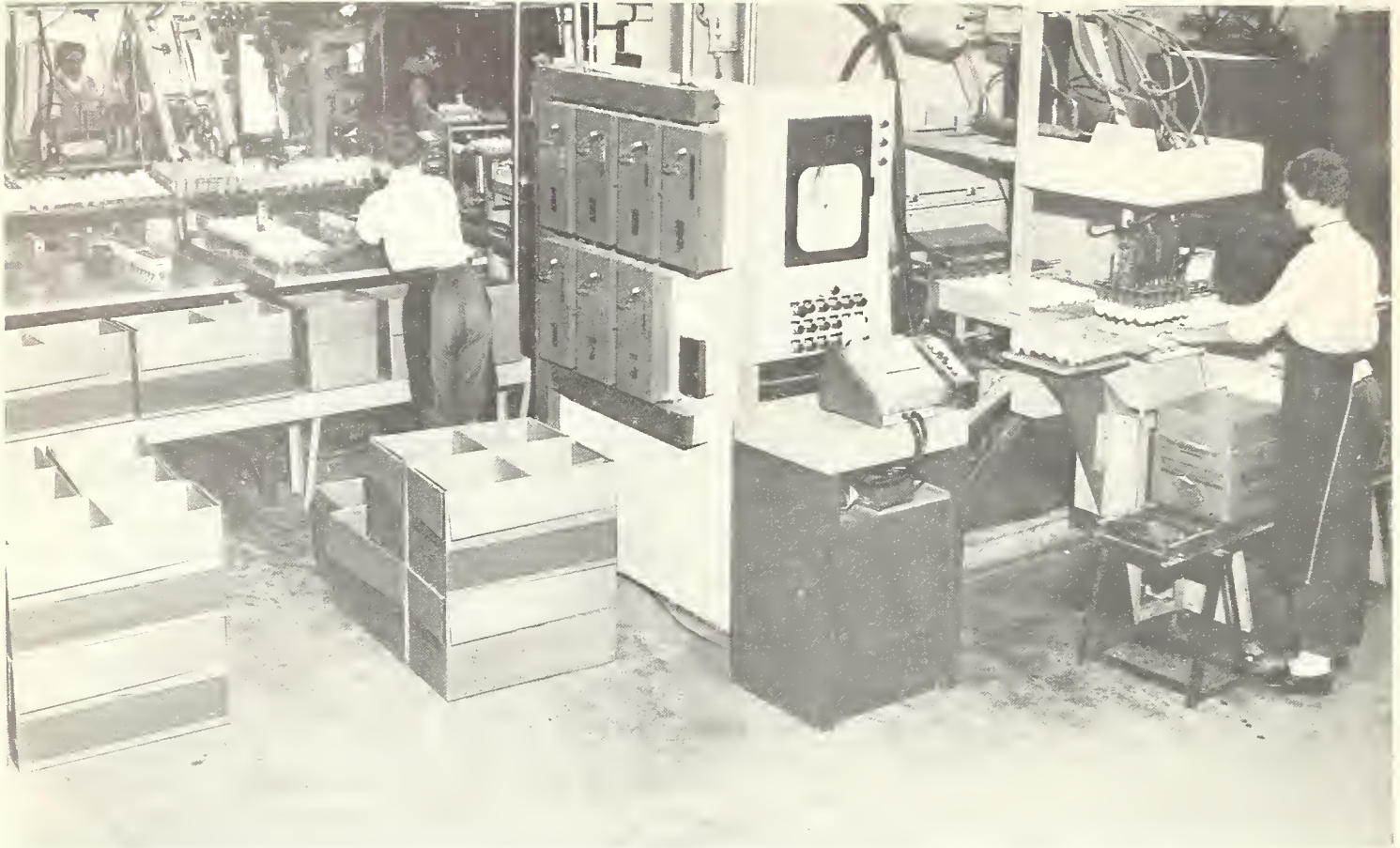
The direct auxiliary candling labor cost ranged from 3.6 cents for association S to 47.3 cents a case for association T.

At association T the direct candling labor cost less a case than the auxiliary candling labor, whereas at the other five associations the direct candling labor cost was more than the auxiliary labor. The direct candling labor was less at this association because nearly 50 percent of the eggs were flash candled.

The auxiliary labor cost of five associations averaged 52.6 percent of the direct candling labor cost.

It was 93 percent at the upper volume group and nearly 20 percent at the lower volume group. Total candling labor cost for the upper volume group averaged 9.5 cents less than for the lower volume group--64.1 and 73.6 cents a case, respectively. The upper volume group candled an average of 4,151 cases as compared with 1,327 by the lower volume group. The range was from a low of 51.8 cents for association V to a high of 94.4 at association U.

Total candling labor output a man-hour averaged 1.1 cases more for the upper volume group than for the lower group--4 cases as



Eggs are washed, mass candled for checks and inferior shell quality, checked for blood spots, and sized on a single line operation.



Close-up of the mass candling operation for checks and poor shell quality.

compared with 2.9 cases. Output ranged from a low of 2.4 cases for association U to 4.8 cases for association V, the association with the lowest total candling labor cost. Direct candling labor output averaged 4.2 cases more for the upper volume group than for the lower group--7.6 cases as compared with 3.4 cases a man-hour. The range was from a low of 3.2 for association S to a high of 7.9 cases for association V.

Cartoning.--Cartoning labor also has been divided into direct candling and into auxiliary cartoning labor. Auxiliary labor, in addition to that mentioned for the candling operation, included setting up cartons but does not include packing the cartoned eggs into cases or boxes. The data on direct cartoning labor costs and output a man-hour for five associations are shown in table 10.

Table 10. --Cartoning eggs: Average direct labor cost and output a man-hour, five associations, 2-week period, 1958

Group and association	Cost			Output a man-hour		
	Direct cartoning	Auxiliary labor ¹	Total labor	Direct cartoning	Auxiliary labor ¹	Total labor
Upper volume group ²	<i>Cents per case</i>			<i>Cases</i>		
V	33.4	5.2	38.6	7.9	45.3	6.7
T	38.0	36.6	74.6	6.3	6.7	3.2
W	32.8	14.9	47.7	7.8	16.7	5.3
Average 3 associations ³	34.7	18.9	53.6	7.3	22.9	5.1
Lower volume group ⁴						
U	⁵ 63.4	14.4	⁵ 77.8	⁵ 3.5	16.0	⁵ 2.9
S	⁵ 72.4	4.2	⁵ 76.6	⁵ 2.4	49.4	⁵ 2.2
Average 2 associations ³	67.9	9.3	77.2	3.0	32.7	2.5
Average 5 associations ³	48.0	15.1	63.1	5.6	26.8	4.1
Range:						
Low	32.8	4.2	38.6	2.4	5.3	2.2
High	⁵ 72.4	36.6	77.8	7.9	49.4	6.7

¹ Includes such labor as supplying eggs to candler and setting up cartons.

² Average volume cartoned was 9,963 cases.

³ Unweighted average.

⁴ Average volume cartoned was 1,002 cases.

⁵ Includes labor for packing cartoned eggs.

The cartoning labor cost for direct cartoning averaged 48 cents a case for five associations and ranged from a low of 32.8 for association W to a high of 72.4 cents for association S. The next highest cost was 63.4 cents for association U. The cost for associations S and U includes labor for packing cartoned eggs. Total cartoning labor averaged 63.1 cents a case and ranged from a low of 38.6 for association V to 77.8 cents for association U--a difference of 39.2 cents a case.

Total cartoning labor output a man-hour averaged four cases for the five associations and ranged from a low of 2.2 cases for association S to a high of 6.7 cases for

association V. The output for association S and U also includes labor for packing cartoned eggs, which was not separable from the cartoning operation.

Packing Cartoned Eggs.--Although packing cartoned eggs into cases is essentially a part of the cartoning operation, direct labor cost and labor output were obtained separately for three of five associations cartoning eggs (table 11).

The range in cost for the three associations was from a low of 5.4 cents for association V to a high of 8.3 cents a case for association W. The average cost was 6.6 cents.

Table 11. --Packing cartoned eggs: Average direct labor cost and output a man-hour, three associations,¹ 2-week period, 1958

Association ²	Cost	Output a man-hour
	<i>Cents per case</i>	<i>Cases</i>
V	5.4	40.0
T	6.2	37.3
W	8.3	28.5
Average	6.6	35.3
Range:		
Low	5.4	28.5
High	8.3	40.0

¹ Associations S and U also cartoned eggs, but the labor could not be separated from the cartoning operation.

² Arranged in order of volume packed from high to low.

Labor output a man-hour averaged 35.3 cases for the three associations and ranged from a low of 28.5 cases for association W to 40 cases for association V, which cartoned the largest volume of eggs.

Coopering Cases.--Coopering cases is a comparatively low cost operation. The direct labor cost averaged 3.5 cents a 30-dozen case for the six associations and ranged from a low of 1.4 cents for association W to a high of 5 cents for association R (table 12). The average labor cost for the upper volume group coopering an average of 21,482 cases during the period was 2.3 cents, or less than half the 4.7 cents a case for the lower volume group coopering an average of only 2,541 cases.

Cases coopered a man-hour by the upper volume group were three times the number of cases coopered by the lower volume group--134.7 compared with 41.6 cases. The average for six associations was 88.2 cases and the range from a low of

37.9 cases for association S to 181.1 cases for association W.

Stacking.--Another low operating cost is the moving of eggs to the holding room and stacking them there. For the six associations studied, the direct labor cost averaged 2 cents a case and ranged from a low of 0.9 cent for association W to a high of 3 cents for association U (table 13). The upper volume group of associations stacked an average of 13,592 cases with an average labor cost of 1.8 cents as compared with 2.2 cents a case for the lower volume group stacking only 2,012 cases during the period.

Labor output a man-hour averaged 187.3 cases for the upper

Table 12. --Coopering cases: Average direct labor cost and output a man-hour, six associations, 2-week period, 1958

Group and association	Cost	Output
	<i>Cents per case</i>	<i>Cases</i>
Upper volume group ¹		
V	1.6	163.3
W	1.4	181.1
T	4.0	59.8
Average 3 associations ²	2.3	134.7
Lower volume group ³		
U	4.5	47.3
S	4.5	37.9
R	5.0	39.7
Average 3 associations ²	4.7	41.6
Average 6 associations ²	3.5	88.2
Range:		
Low	1.4	37.9
High	5.0	181.1

¹ Average volume coopered was 21,482 cases.

² Unweighted average.

³ Average volume coopered was 2,541 cases.

Table 13. --Stacking eggs: Average direct labor cost and output a man-hour, six associations, 2-week period, 1958

Group and association	Cost	Output
Upper volume group ¹	<i>Cents per case</i>	<i>Cases</i>
V	2.2	116.3
T	2.3	119.7
W	.9	325.9
Average 3 associations ²	1.8	187.3
Lower volume group ³		
U	3.0	86.8
S	2.5	83.1
R	1.0	233.4
Average 3 associations ²	2.2	134.4
Average 6 associations ²	2.0	160.9
Range:		
Low	.9	83.1
High	3.0	325.9

¹ Average volume stacked was 13,952 cases.

² Unweighted average.

³ Average volume stacked was 2,012 cases.

volume group--52.9 cases more than the 134.4 cases for the lower group. The labor output for six associations averaged 160.9 cases. The range was from a low of 83.1 cases for association S to a high of 325.9 cases for association W.

Loading Out.--Loading eggs out of a plant also is a relatively low cost operation. The direct labor cost averaged 5 cents a case for six associations and ranged from a low of 2.4 cents for association R to a high of 10.6 cents for association U (table 14). The cost for the upper volume, loading out 14,193 cases, was 4.7 cents--only 0.6 cent less than the average cost of 5.3 cents for the lower volume group which loaded out an average of 2,054 cases.

Loading out labor output a man-hour ranged from a low of 29.6 cases for association U to a high of 95.3 cases for association R. The average output for six associations was 62.4 cases. There was a difference of only 2.6 cases between the output of the upper and lower volume groups--61.1 and 63.7 cases, respectively.

Delivering.--Four of the western associations studied delivered eggs to market in association-owned trucks. The direct labor cost and output is shown in table 15.

The direct labor cost averaged 20.8 cents a case for the four associations. The range was from a low of 3.3 for association V to a high of 49.8 cents for association T. The

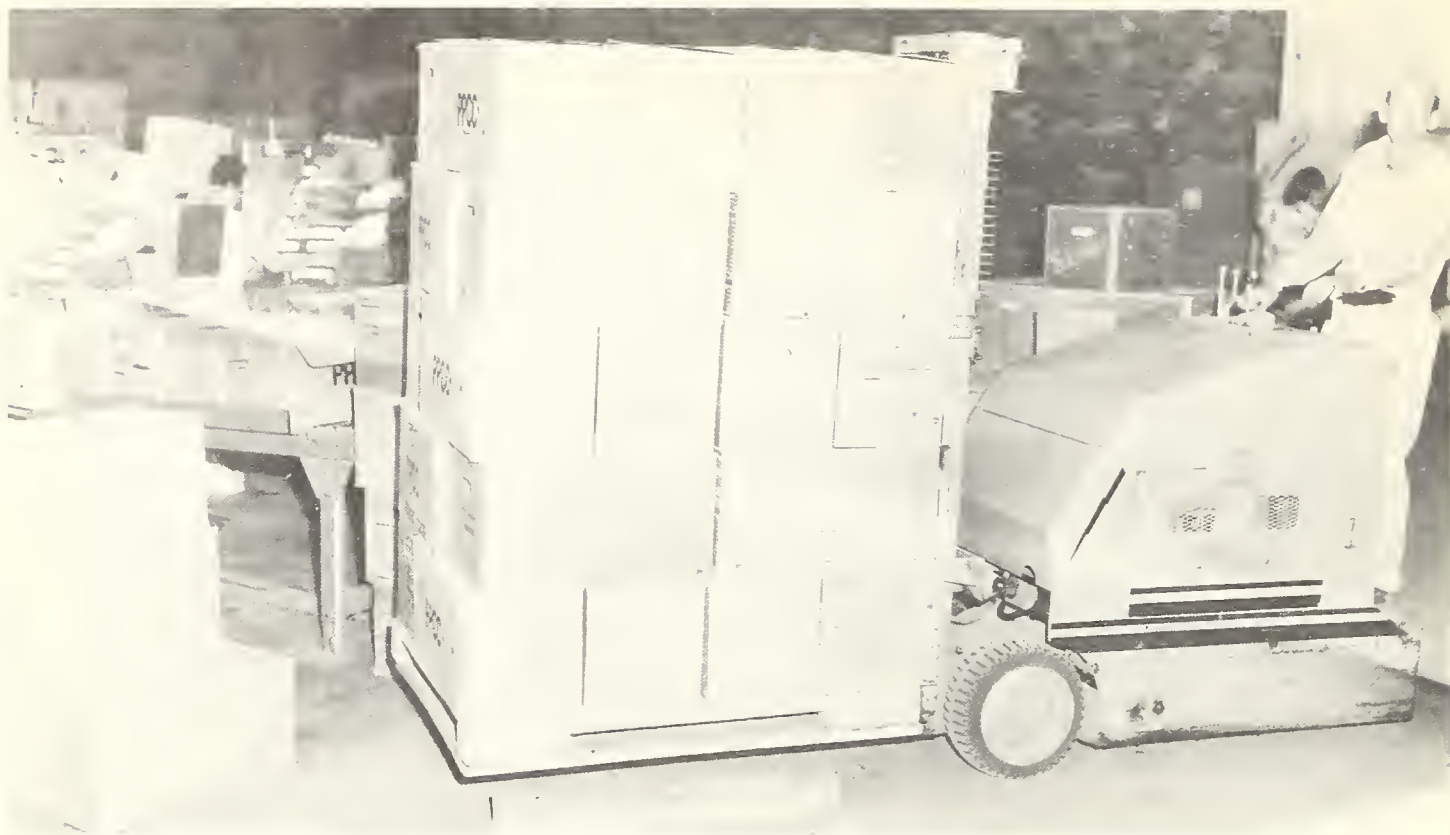
Table 14. --Loading out eggs: Average direct labor cost and output a man-hour, six associations, 2-week period, 1958

Group and association	Cost	Output
Upper volume group ¹	<i>Cents per case</i>	<i>Cases</i>
V	4.8	55.8
T	5.5	52.7
W	3.8	74.8
Average 3 associations ²	4.7	61.1
Lower volume group ³		
U	10.6	29.6
S	3.0	66.6
R	2.4	95.3
Average 3 associations ²	5.3	63.7
Average 6 associations ²	5.0	62.5
Range:		
Low	2.4	29.6
High	10.6	95.3

¹ Average volume loaded was 14,193 cases.

² Unweighted average.

³ Average volume loaded was 2,054 cases.



Thirty cases of eggs quickly and easily moved with a power lift truck.

Table 15. --Delivering eggs: Average direct labor cost and output a man-hour, four associations, 2-week period, 1958¹

Group and association	Cost	Output
	<i>Cents per case</i>	<i>Cases</i>
Upper volume group		
V	<u>3.3</u>	<u>87.3</u>
Lower volume group ²		
U	14.9	18.5
T	49.8	6.2
W	<u>15.1</u>	<u>19.2</u>
Average 3 associations ³	<u>26.6</u>	<u>14.6</u>
Average 4 associations ³	<u>20.8</u>	<u>32.8</u>
Range:		
Low	3.3	6.2
High	49.8	87.3

¹ Does not include contract hauling.

² Average volume delivered by association trucks was 2,457 cases.

³ Unweighted average.

cost for the association in the upper volume group was 3.3 cents as compared with 26.6 cents a case for the three associations in the lower volume group--a difference of 23.3 cents. The volume delivered by the high volume association was more than eight times that of the lower volume group--2,457 cases.

Output a man-hour for the upper volume association was 87.3 cases--72.7 cases more than the 14.6 cases for the lower volume group. The average for the four associations was 32.8 cases. The range among associations was from a low of 6.2 cases for association T to a high of 87.3 for association V.

A more complete breakdown of the cost of delivering eggs is shown in table 16. This table shows costs for direct labor, truck operating, and in total by plants for association

Table 16. --Delivering eggs: Average direct costs, four associations, 2-week period, 1958

Group and association	Association trucks			Contract trucks ¹	Total
	Direct labor	Truck expense	Total		
Upper volume group:			<i>Cents per case</i>		
V	<u>3.3</u>	<u>3.6</u>	<u>6.9</u>	--	<u>6.9</u>
Lower volume group ²					
U	14.9	6.5	21.4	--	21.4
T	49.8	14.4	64.2	20.6	³ 27.5
W	<u>15.1</u>	<u>6.3</u>	<u>21.4</u>	--	<u>21.4</u>
Average 3 associations ⁴	<u>26.6</u>	<u>9.1</u>	<u>35.7</u>	<u>20.6</u>	<u>23.5</u>
Average 4 associations ⁴	<u>20.8</u>	<u>7.7</u>	<u>28.5</u>	<u>20.6</u>	<u>19.3</u>
Range:					
Low	3.3	3.6	6.9	--	6.9
High	49.8	14.4	64.2	--	³ 27.5

¹ Cost or charge to association patrons.

² Average volume delivered by association trucks was 2, 457 cases -- by all trucks, 5, 843 cases.

³ Weighted average cost association truck expense and contract hauling.

⁴ Unweighted average of vertical columns.

trucks, contract hauling; and the grand total for delivering costs.

Total delivering costs with association trucks ranged from a low of 6.9 cents for association V to a high of 64.2 cents for association T and averaged 28.5 cents a case for four associations. Association V delivered a much larger volume of eggs than did the other three associations.

For association T the cost of delivering eggs by contract trucks was much less than by association trucks--20.6 as compared with 64.2 cents a case. The volume delivered with contract trucks was more than six times larger than the volume delivered with association trucks.

Shell Treating.--Only two of the six associations included in the study shell treated eggs with oil during

the period of study. Both associations had nearly the same direct labor cost--18.5 and 17.8 cents a case (table 17).

Outputs a man-hour also were similar--11.5 and 13.4 cases.

Shell Cleaning.--Only one of the six associations studied shell cleaned

Table 17. --Shell treating eggs: Average direct labor cost and output a man-hour, two associations, 2-week period, 1958

Association	Cost	Output
	<i>Cents a case</i>	<i>Cases</i>
U	18.5	11.5
T	<u>17.8</u>	<u>13.4</u>
Average ¹	18.2	12.5

¹ Unweighted average.

Table 18. --Breaking eggs: Average direct labor cost and output a man-hour, two associations, 2-week period, 1958

Association	Cost	Output
	<i>Cents per case</i>	<i>Cases</i>
T ¹	166.8	1.3
U	<u>102.9</u>	<u>2.0</u>
Average ²	134.9	1.7

¹ One-week period.

² Unweighted average.

eggs. The cleaning was done in connection with the grading and packing process, and as a result no cleaning labor was involved except to service the cleaning equipment. Such labor was almost negligible.

Egg Breaking.--Two of the six associations performed a hand egg breaking operation on a relatively small scale.

The direct labor cost for one association was \$1.67 for a 30-dozen case and \$1.03 for the other. Output a man-hour was 1.3 and 2 cases (table 18).

Materials Used

Table 19 shows the cost of materials used for the loose and cartoned pack, shell treating, and egg breaking.

Loose Pack.--The cost of materials used in the loose pack ranged from a low of 39.8 cents for association R to a high of 54.8 cents a 30-dozen case for association S--a spread of 15 cents. The average cost was 46.4 cents. The materials consisted largely of fiberboard cases and flats and fillers.

Cartoned Pack.--Cost of materials in the cartoned pack ranged from a low of 86.4 for association V to a

Table 19. --Cost of materials used for loose and carton packed eggs, shell treating, and egg breaking, six associations, 2-week period, 1958

Association	Loose pack	Cartoned pack	Shell treating	Egg breaking
	<i>Cents per case</i>			
R	39.8	--	--	--
S	54.8	95.1	--	--
T	48.6	95.6	1.7	43.7
U	41.9	95.7	.8	52.8
V	45.9	86.4	--	--
W	<u>47.5</u>	<u>88.7</u>	<u>--</u>	<u>--</u>
Average ²	<u>46.4</u>	<u>92.3</u>	<u>1.3</u>	<u>48.3</u>
Range:				
Low	39.8	86.4	.8	43.7
High	54.8	95.7	1.7	52.8

¹ Materials cost calculated on a basis of 30 dozen eggs a case.

² Unweighted average.

high of 95.6 and 95.7 cents a 30-dozen case for associations T and U, respectively--a spread of approximately 9 cents. The cost averaged 92.3 cents for five associations. Materials used in the cartoned pack include mostly cases and cartons.

Shell Treating.--The cost of oil for shell treating eggs was 1.7 and 0.8 cents a 30-dozen case and averaged 1.3 cents for two associations. Variations among associations in cost of oil a case may be caused by differences in the price of oil and the quantity used for a case of eggs.

Egg Breaking.--For the two associations conducting an egg breaking operation, the cost for metal containers for liquid egg was 43.7 and 52.8 cents a 30-dozen case. The average cost was 48.3 cents a case. A comparatively small volume of eggs was broken out during the period studied--682 cases in 1 week at association T, and 181 cases at association U or a weekly average of only 91 cases. The association with the largest volume had the lowest materials cost.

Other Direct Costs

In addition to direct labor and truck costs there are three other direct costs: Replacement cost of eggs damaged or of unsatisfactory quality; service fees for Federal or State inspection; and royalty⁷ on machines for setting up and closing cartons and automatic grading and packaging equipment.

⁷Charge by manufacturer for use of its equipment. The charge usually varies with the volume cartoned during a given period.

Table 20. --Costs of inspection fees and rental of candling and cartoning equipment, three associations, 2-week period, 1958

Association	Federal or State inspection	Rental	Total
<i>Cents per case</i>			
T	0.5	--	0.5
V	--	¹ 15.5	15.5
W	.7	¹ 17.4	18.1
Average ²	.6	¹ 16.5	11.4

¹ Includes grading equipment.

² Unweighted average.

This study did not attempt to determine costs of replacing eggs unfit for the candling and cartoning packs. Replacement costs varied widely from association to association and were chiefly dependent upon egg quality standards, sales outlets, relative prices, and association policies.

Direct costs for Federal or State inspection and royalties appear in table 20. Inspection fees averaged 0.6 cent a case for two associations and ranged from 0.5 to 0.7 cent.

For two associations, the rental cost on equipment was 15.5 and 17.4 cents a case and averaged 16.5 cents.

Total Direct Costs

In order to determine total direct costs by operations, it is necessary to add, whenever pertinent, the labor, materials used, and truck and other direct costs. A summary table (table 21) combines direct labor cost from table 4, materials costs from table 19, truck costs from tables 7

Table 21. --Average total direct costs of operations, six associations, 2-week period, 1958

Operation	Labor	Materials	Truck ¹	Other	Total
<i>Cents per case</i>					
Collecting ²	8.7	--	5.5	--	14.2
Receiving	4.8	--	--	--	4.8
Candling	64.0	46.4	--	³ 11.4	121.8
Cartoning ²	63.1	92.3	--	³ 11.4	166.8
Packing cartoned eggs ⁴	6.6	--	--	--	6.6
Coopering cases	3.5	--	--	--	3.5
Stacking	2.0	--	--	--	2.0
Loading out	5.0	--	--	--	5.0
Delivering	20.8	--	7.7	--	28.5
Shell treating ⁵	18.2	1.3	--	--	19.5
Egg breaking ⁵	134.9	48.3	--	--	183.2

¹ Represents truck operating expenses of association trucks. Cost of contract trucks not included.

² Five associations.

³ Inspection fees and rental of candling and cartoning equipment.

⁴ Three associations.

⁵ Two associations.

and 16, and other direct costs from table 20.

To illustrate, the average direct labor cost for the collecting operation was 8.7 cents and truck operating costs were 5.5 cents--making a total average direct cost of 14.2 cents a case for this operation. In the receiving operation, labor constituted the only direct cost, averaging 4.8 cents. On the other hand, in the cartoning operation there were direct costs for labor, packing materials, Federal or State inspection, and royalty and rental on equipment. These costs averaged \$1.67 cents a case for five associations (table 21).

Indirect Costs

Total indirect costs do not fluctuate much with total volume of eggs

received. However, unit indirect costs fluctuate considerably with changes in volume. Since it was not feasible to visit all associations during the same period of their seasonal volume cycle, average receipts for each 2 weeks during the year, rather than total receipts during the 2-week period studied, were used to compute indirect costs a case. By doing this, unit indirect costs were made more comparable among associations than by using a receipts period that might be high or low in the volume cycle.

Based on the average number of cases received during an average 2-week period, indirect costs averaged 49.4 cents a case for six associations (table 22). These costs varies from a low of 34.6 cents for association W to a high of 72.4 cents for association U. The average cost for the three high volume

Table 22. --Indirect costs: Plant, non-plant, and total indirect costs of eggs received,¹ six associations, 2-week period, 1958

Group and association	Plant				Non-plant				Total indirect costs
	Salaries ²	Other ³	Depreci- ation ⁴	Total	Salaries ⁵	Other ⁶	Depreci- ation ⁷	Total	
<i>Cents per case</i>									
Upper volume group ⁸									
V	9.9	10.1	2.2	22.2	9.0	30.2	0.6	39.8	62.0
T	14.4	0.5	6.2	21.1	21.5	5.2	(⁹)	26.7	47.8
W	8.8	4.8	5.7	19.3	11.8	3.3	0.2	15.3	34.6
Average ¹⁰	11.0	5.1	4.7	20.8	14.1	12.9	0.4	27.3	48.1
Lower volume group ¹¹									
U	17.6	26.0	2.4	46.0	18.2	6.0	2.2	26.4	72.4
R	--	2.1	0.4	2.5	16.6	17.6	(⁹)	34.2	36.7
S	--	3.0	0.8	3.8	21.2	17.5	(⁹)	38.7	42.5
Average ¹⁰	5.9	10.3	1.2	17.4	18.7	13.7	0.7	33.1	50.5
Average all associa- tions ¹⁰	8.4	7.8	3.0	19.2	16.4	13.3	0.5	30.2	49.4
Range:									
Low	8.8	0.5	0.4	2.5	9.0	3.3	0.2	15.3	34.6
High	17.6	26.0	6.2	22.2	21.5	30.2	2.2	39.8	72.4

¹ Receipts for 12 months ending with period of study divided by 26.

² Includes association wages or salaries for plant supervision, janitor and watchman, and maintenance and repair labor.

³ Includes expenses for heat, utilities, general insurance, taxes (real estate and personal property), maintenance and repair, plant supplies, and misc.

⁴ Includes depreciation of buildings and plant machinery and equipment.

⁵ Includes salaries of manager, clerical help, fieldmen, and salesmen.

⁶ Includes such non-plant expenses as telephone and telegraph, advertising, auditing, directors' expense, annual meetings, and the like, except depreciation.

⁷ Includes depreciation on office furniture and fixtures.

⁸ Average volume received was 12,106 cases.

⁹ Not obtained separately.

¹⁰ Unweighted average.

¹¹ Average volume received was 1,843 cases.

associations was only 2.4 cents less than that for the low volume group--48.1 and 50.5 cents a case, respectively.

Table 22 also shows a detailed analysis of indirect costs. They are classified first into plant

and non-plant costs. Plant and non-plant costs are further divided into salaries, expenses other than salaries, and depreciation. Such an analysis facilitates the comparison of certain groups of indirect expenses and helps explain variations in costs. These data

Table 23. --Indirect costs: Percentage distribution of plant and non-plant costs, six associations, 2-week period, 1958

Association	Plant				Non-plant				Total indirect costs
	Salaries ¹	Other ²	Depreciation ³	Total	Salaries ⁴	Other ⁵	Depreciation ⁶	Total	
Upper volume group ⁷									
V	16.0	16.2	3.5	35.7	14.5	48.8	1.0	64.3	100.0
T	30.3	1.0	12.9	44.2	45.0	10.8	(⁸)	55.8	100.0
W	25.5	13.8	16.6	55.9	34.2	9.5	0.4	44.1	100.0
Average ⁹	24.0	10.3	11.0	45.3	31.2	23.0	0.5	54.7	100.0
Lower volume group ¹⁰									
U	24.4	35.8	3.4	63.6	25.1	8.3	3.0	36.4	100.0
R	--	5.7	1.1	6.8	45.4	47.8	(⁸)	93.2	100.0
S	--	7.1	1.9	9.0	49.8	41.2	(⁸)	91.0	100.0
Average ⁹	8.2	16.2	2.1	26.5	40.1	32.4	1.0	73.5	100.0
Average all associations ⁹	16.0	13.3	6.6	35.9	35.7	27.7	0.7	64.1	100.0
Range:									
Low	16.0	1.0	1.1	6.8	14.5	8.3	0.4	36.4	--
High	30.3	35.8	16.6	63.6	49.8	48.8	3.0	93.2	--

¹ Includes wages or salaries for plant supervision, janitor and watchman, and maintenance and repair labor.

² Includes expenses for heat, utilities, general insurance, taxes (real estate and personal property), maintenance and repair, plant supplies, and miscellaneous.

³ Includes depreciation of building and plant machinery and equipment.

⁴ Includes salaries of manager, clerical help, fieldmen, and salesmen.

⁵ Includes such non-plant expenses as telephone and telegraph, advertising, auditing, directors expenses, annual meetings, and the like, except depreciation.

⁶ Includes depreciation on office furniture and fixtures.

⁷ Average volume received was 12,106 cases.

⁸ Not obtained separately.

⁹ Unweighted average.

¹⁰ Average volume received was 1,843 cases.

are shown percentagewise in table 23.

The average total indirect plant cost for the six associations was 19.2 cents a case as compared with 30.2 cents for the total indirect non-plant costs. The 19.2 cents consisted of 8.4 for salaries, 3 for depreciation, and 7.8 for other plant costs. Total indirect non-plant costs consisted of 16.4 cents for salaries,

0.5 cent for depreciation, and 13.3 cents a case for other non-plant costs.

Indirect plant costs averaged 35.9 percent of total indirect costs and indirect non-plant costs averaged 64.1 percent of the total. Total indirect plant salaries were 16 percent of total indirect costs--total non-plant salaries 35.7 percent--a total of 51.7 percent (table 23).

Costs by Type of Pack

Direct unit costs given thus far in the report have been shown by individual operations. Comparable total overall costs, both direct and indirect, can be determined by combining costs incurred in the specific type of pack of eggs handled by an association when the labor, materials, trucks, and other costs are known.

All associations packed one or more of three packs of eggs: (1) Consumer grade loose, in cases; (2) consumer grade, cartoned in cases; and (3) liquid, in cans.

Costs by operations for the three packs of eggs by associations and the average of associations concerned appear in tables 24 to 26. Costs for eggs of consumer grade, loose pack, appear in table 24; consumer grade cartoned, in table 25; and liquid egg pack, in table 26. Total costs are shown by the case and by the dozen.

For comparison, the average total cost and the number of cooperatives that prepared each pack were:

Type of pack	Number of associations	Average cost ¹	
		Case	Dozen
<i>Cents</i>			
Consumer grade, loose	6	\$2.23	7.4
Consumer grade, cartoned	5	2.73	9.1
Liquid	2	2.65	8.9

¹ The cost to replace eggs not suitable for use in each pack is not included in these costs, but must be considered when these data are used to determine necessary markups.

Direct costs were made up of direct labor, packing materials, truck expenses, and other costs such

as rental of candling and cartoning equipment.

To find the total cost of each pack, the indirect costs were added to the direct costs although not allocated to separate egg-handling operations. In the data presented, indirect costs have been allocated proportionately to each type of pack.

The allocation could be made by other methods: In the same ratio that total direct labor cost for each pack is of total direct labor cost; in the same ratio as total direct costs for each pack is of total direct costs; or in the ratio of number of labor hours in each pack to total number of labor hours.

Indirect costs were allocated proportionately to each pack in this study because of simplicity of computation. Allocation by other methods mentioned above would increase indirect costs somewhat for the consumer grade loose and cartoned packs for the associations in this study.

The following tabulation shows the average and range of total costs by the dozen for type of pack:

Cost	Type of pack		
	Consumer grade, loose	Consumer grade, cartoned	Liquid
<i>Cents per dozen</i>			
Average	7.4	9.1	8.9
Range:			
Low	¹ 4.6	² 7.8	8.3
High	8.9	10.1	9.4

¹ Does not include direct labor cost for collecting, delivering, shell treating, shell cleaning, and truck expense for collecting and delivering.

² Does not include direct labor cost for shell treating and shell cleaning.

Table 24. --Cost for consumer grade, loose case-packed eggs, by operations and total, six associations, 2-week period, 1958

Cost and operation	Association						Average ¹
	R	S	T	U	V	W	
Direct costs:							
Direct labor:	<i>Cents per case</i>						
Collecting	(²)	(²)	9.9	7.5	4.6	12.6	8.7
Receiving	8.1	6.8	2.7	6.0	1.4	3.7	4.8
Candling:							
Direct candling	44.5	49.1	33.3	73.8	33.5	32.8	44.5
Auxiliary labor	(³)	3.6	47.3	20.6	18.3	27.0	23.4
Coopering cases	5.0	4.5	4.0	4.5	1.6	1.4	3.5
Stacking	1.0	2.5	2.3	3.0	2.2	0.9	2.0
Loading out	2.4	3.0	5.5	10.6	4.8	3.8	5.0
Delivering	(²)	(²)	⁴ 7.9	⁴ 13.6	3.3	⁴ 3.2	7.0
Shell treating	(²)	(²)	⁵ .3	⁵ 3.5	(²)	(²)	1.9
Shell cleaning	(²)	⁶ 0.6	(⁷)	(²)	(²)	(²)	0.6
Total direct labor	<u>61.0</u>	<u>70.1</u>	<u>113.2</u>	<u>143.1</u>	<u>69.7</u>	<u>85.4</u>	<u>101.4</u>
Packing materials	39.8	54.8	48.6	41.9	45.9	47.5	46.4
Truck expense: ⁸							
Collecting	(²)	⁹ 7.4	5.7	3.6	3.6	¹⁰ 13.0	6.7
Delivering	(²)	(²)	¹⁰ 19.6	¹¹ 5.9	3.6	¹¹ 1.3	7.6
Other	--	--	0.5	--	15.5	18.1	11.4
Total direct cost	<u>100.8</u>	<u>132.3</u>	<u>187.5</u>	<u>194.5</u>	<u>138.3</u>	<u>165.3</u>	<u>173.5</u>
Indirect costs:							
Plant	2.5	3.8	21.1	46.0	22.2	19.3	19.2
Non-plant	<u>34.2</u>	<u>38.7</u>	<u>26.7</u>	<u>26.4</u>	<u>39.8</u>	<u>15.3</u>	<u>30.2</u>
Total indirect cost	<u>36.7</u>	<u>42.5</u>	<u>47.8</u>	<u>72.4</u>	<u>62.0</u>	<u>34.6</u>	<u>49.4</u>
Total cost:							
A case	¹² 137.5	¹³ 174.8	235.4	266.9	¹⁴ 200.3	¹⁴ 199.9	222.9
A dozen	¹² 4.6	¹³ 5.8	7.8	8.9	¹⁴ 6.7	¹⁴ 6.7	7.4

¹ Unweighted average of associations performing operation.

² Operation not performed by association.

³ Included in direct candling labor.

⁴ Direct labor cost divided by total volume collected or delivered.

⁵ Shell treating labor cost divided by total volume candled and cartoned.

⁶ Shell cleaning labor divided by total volume candled and cartoned.

⁷ Negligible amount of labor required.

⁸ Collecting and delivering costs, including labor, should be charged only to the actual number of cases collected or delivered.

⁹ Cost of contract hauling divided by total volume received.

¹⁰ Weighted average cost of association truck expense and cost of contract truck hauling. See tables 7 and 16 for actual collecting and delivering costs by contract truckers.

¹¹ Association truck expense divided by total volume loaded out.

¹² Does not include direct labor cost for collecting, delivering, shell cleaning, and shell treating and truck expense for collecting and delivering.

¹³ Does not include direct labor cost for collecting, delivering, and shell treating and truck expense for delivering.

¹⁴ Does not include direct labor expense for shell treating or shell cleaning.

Table 25. --Cost for consumer grade, cartoned case-packed eggs, by operations and total, five associations, 2-week period, 1958

Cost and operation	Association					Average ¹
	S	T	U	V	W	
Direct costs:						
Direct labor:	Cents per case					
Collecting	(²)	9.9	7.5	4.6	12.6	8.7
Receiving	6.8	2.7	6.0	1.4	3.7	4.1
Cartoning:						
Direct candling	72.4	38.0	63.4	33.4	32.8	48.0
Auxiliary labor	4.2	36.6	14.4	5.2	14.9	15.1
Packing cartoned eggs	(³)	6.2	(³)	5.4	8.3	6.6
Coopering cases	4.5	4.0	4.5	1.6	1.4	3.2
Stacking	2.5	2.3	3.0	2.2	0.9	2.2
Loading out	3.0	5.5	10.6	4.8	3.8	5.5
Delivering	(²)	4 7.9	4 13.6	3.3	4 3.2	7.0
Shell treating	(²)	5 3	5 3.5	(²)	(²)	1.9
Shell cleaning	6 0.6	(⁷)	(²)	(²)	(²)	0.6
Total direct labor	94.0	113.4	126.5	61.9	81.6	102.9
Packing materials	95.1	95.6	95.7	86.4	88.7	92.3
Truck expense: ⁸						
Collecting	⁹ 7.4	5.7	3.6	3.6	¹⁰ 13.0	6.7
Delivering	(²)	¹⁰ 19.6	¹¹ 5.9	3.6	¹¹ 1.3	7.6
Other	--	0.5	--	15.5	18.1	11.4
Total direct cost	196.5	234.8	231.7	171.0	202.7	223.8
Indirect costs:						
Plant	3.8	21.1	46.0	22.2	19.3	22.5
Non-plant	38.7	26.7	26.4	39.8	15.3	29.4
Total indirect cost	42.5	47.8	72.4	62.0	34.6	51.9
Total cost:						
A case	¹² 239.0	282.6	304.1	233.0	¹³ 237.3	272.8
A dozen	¹² 8.0	9.4	10.1	7.8	¹³ 7.9	9.1

¹ Unweighted average of associations performing operation.

² Operation not performed by association.

³ Included in direct handling labor.

⁴ Direct labor cost divided by total volume collected or delivered.

⁵ Shell treating labor cost divided by total volume candled and cartoned.

⁶ Shell cleaning labor divided by total volume candled and cartoned.

⁷ Negligible amount of labor required.

⁸ Collecting and delivering costs, including labor, should be charged only to the actual number of cases collected or delivered.

⁹ Cost of contract hauling divided by total volume received.

¹⁰ Weighted average cost of association truck expense and cost of contract truck hauling. See tables 7 and 16 for actual collecting and delivering costs by contract truckers.

¹¹ Association truck expense divided by total volume loaded out.

¹² Does not include direct labor cost for collecting and shell treating and truck expense for delivering.

¹³ Does not include direct labor cost for shell treating or shell cleaning.

Table 26. --Total cost of liquid pack of eggs, two associations, 2-week period, 1958

Cost and operation	Association		Average ¹
	T ²	U	
<u>Direct costs:</u>			<i>Cents per case</i>
<u>Direct labor:</u> ³			
Collecting	9.9	7.5	8.7
Receiving	2.7	6.0	4.4
Egg breaking	166.8	102.9	134.9
Coopering cases	<u>4.0</u>	<u>4.5</u>	<u>4.3</u>
Total direct labor	<u>183.4</u>	<u>120.9</u>	<u>152.3</u>
Packing materials	43.7	52.8	48.3
Truck expense: ³			
Collecting	<u>5.7</u>	<u>3.6</u>	<u>4.7</u>
Total direct cost	232.8	177.3	205.3
<u>Indirect costs:</u>			
Plant	21.1	46.0	33.6
Non-plant	<u>26.7</u>	<u>26.4</u>	<u>26.6</u>
Total indirect costs:	<u>47.8</u>	<u>72.4</u>	<u>60.2</u>
<u>Total cost:</u>			
A case	280.6	249.7	265.5
A dozen	9.4	8.3	8.9

¹ Unweighted average.² One-week period.³ No attempt made to determine labor costs chargeable to the liquid egg pack for candling, stacking, loading out, delivering, or delivery truck operating expense.

The association with the lowest consumer grade, loose pack cost, did not perform several of the operations--collecting, delivering, shell treating, and shell cleaning. To make the cost of this association, 4.6 cents a dozen, comparable with the associations performing

these operations along with the five others performed by both, the cost for collecting, delivering, shell treating, and shell cleaning should be added. The average cost of these operations for the associations performing them was 32.5 cents a case, or nearly 1.1 cents a dozen.

Other Publications Available

The Story of Farmers' Cooperatives, Educational Circular 1.

Organizing a Farmer Cooperative, FCS Circular 18.

Costs of Marketing Eggs and Labor Output of Selected Cooperatives, Part I, Northeast, General Report 59. Harry E. Ratcliffe.

Costs of Marketing Eggs and Labor Output of Selected Cooperatives, Part II, North Central States. General Report 72. Harry E. Ratcliffe.

Interstate Trucking of Fresh and Frozen Poultry under Agricultural Exemption, Marketing Research Report 224. James R. Snitzler and Robert J. Byrne.

Cooperative Marketing of Turkeys, FCS Circular 23. Henry W. Bradford and John J. Scanlan.

Poultry and Egg Cooperatives Vary Widely, Bulletin Reprint 1. John J. Scanlan.

Using Your Poultry and Egg Cooperative, Educational Circular 9. John J. Scanlan.

Cooperative Marketing of Eggs and Poultry in Ohio, Bulletin 59. Harry E. Ratcliffe.

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